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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/870,372	05/30/2001	Hiroshi Nemoto	791_146 CIP	8047

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EXAMINER

CREPEAU, JONATHAN

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 09/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/870,372

Applicant(s)

NEMOTO ET AL.

Examiner

Jonathan S. Crepeau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-10 and 12-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-10 and 12-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office action addresses claims 2-10 and 12-19. Applicants' declarations under 37 CFR §1.132 are sufficient to remove the JP 2000-149886 reference as prior art against independent claims 2 and 19. However, the reference still qualifies as prior art against the dependent claims, and as such, claims 3-5, 10, and 12-18 are rejected under 35 USC §102(a). In addition, new grounds of rejection under 35 USC §103 and the doctrine of obviousness-type double patenting are set forth herein, although these new grounds were not necessitated by amendment. Accordingly, this action is non-final.

### ***Claim Rejections - 35 USC § 102***

2. Claims 3-5, 10, and 12-18 are rejected under 35 U.S.C. 102(a) as being anticipated by JP 2000-149886. Regarding claims 3, 4, 12, 14, and 15, the reference is directed to a battery comprising a cylindrical case, an internal electrode body (5), an electrolyte, first and second terminals (73), first and second end caps (71), and first and second insulators (74) (see abstract, Fig. 1). Regarding claim 16, the insulators are made of ethylene-propylene rubber (see paragraph 22 of the machine translation). The rubber has a hardness of 30 durometer A to 60 durometer D (see abstract). Regarding claims 10 and 18, the rubber has a volume resistivity of at least  $10^{10}$  ohm-cm (see paragraph 10). Regarding claims 5, 13, and 17, the body member has

crimped portions in which the first and second end caps are clamped (see Fig. 1).

Thus, the instant claims are anticipated.

***Claim Rejections - 35 USC § 103***

3. Claims 2-5, 12, 13, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al (U.S. Patent 5,462,820) in view of Feldhake (U.S. Patent 3,713,896).

Regarding claims 2 and 19, Tanaka et al. is directed to a battery comprising a case (2), an internal electrode body (3, 4, 5), an electrolyte (6), first and second terminals (2, 8), and an insulating gasket (1) positioned between the case and the second terminal (see col. 2, lines 29-37; Fig. 1). Regarding claims 3 and 19, the second terminal (8) is an end cap, and the insulator is positioned between the case/first terminal (2) and the end cap. Regarding claims 4 and 12, the case is generally cylindrical. Regarding claims 5 and 13, the case has a first crimped portion to which the end cap is clamped. Regarding claims 2 and 19, the gasket is made of an ethylene-propylene (E-P) rubber (see abstract).

Tanaka et al. do not expressly teach that the E-P rubber has a surface hardness of from 30 (durometer A) to 60 (durometer D), as recited in claims 2 and 19.

However, the E-P rubber of the Tanaka reference would be likely to have a hardness within this range, as evidenced by the disclosure of Feldhake. Feldhake is directed to a battery having a layer of cured sealing resin (12) between the cap (10) and the case (16) (see Fig. 3; col. 7, line 24). In column 6, line 65, the reference teaches that "[t]he cured epoxy-polyamide resin,

herein after called 'epoxy-polyamide resin' or 'the cured resin,' is a visco-elastic solid having physical properties similar to ordinary rubber (Durometer hardness of about 40 to 70)." Thus, the disclosure of Feldhake indicates that a durometer hardness of between 40 and 70 is conventional in a rubber battery gasket, and therefore could be expected to be present in the gasket of the Tanaka reference. Accordingly, the range of durometer hardness recited in instant claims 2 and 19, as it overlaps with the range disclosed by Feldhake, is not considered to distinguish over the references.

4. Claims 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. in view of Feldhake as applied to claims 2-5, 12, 13, and 19 above, and further in view of Sano et al (U.S. Patent 5,624,771).

Neither reference teaches that the volume resistivity of the EP rubber is at least  $10^{10}$  ohm-cm, as recited in claims 10 and 18.

Sano et al. teach in column 2, line 8 that "[t]he electrolyte cell can be sealed by applying a sealant such as a plastic gasket having high electrolyte resistance and electrical insulation characteristics between the cover case 1 acting as a positive terminal and the bottom case 5 acting as a negative terminal regardless of the type of cells."

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated by this disclosure to use a gasket having a high electrical insulation characteristics (i.e., volume

resistivity) in the battery of Tanaka. Because the gasket of Tanaka is located between the terminals of the battery, the artisan would be motivated to use a gasket having as high a volume resistivity as possible in order to prevent current from short-circuiting between the terminals through the gasket. Accordingly, Applicant's claimed range of volume resistivity is not considered to distinguish over the references.

5. Claims 2-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 771040 (Kita et al.) in view of Tanaka and Feldhake.

Regarding claim 2, Kita et al. teach a battery comprising a case (17), an internal electrode body, an electrolyte, first and second terminals (21, 20), and insulating gaskets (50) positioned between the case and each terminal (see Figs. 17 and 18; col. 17, lines 14-33). The gasket is made of polypropylene (see col. 11, line 12). Regarding claims 3, 6, and 9, first and second end caps (1) are positioned at opposite ends of the case, and each insulator is positioned between each terminal and its respective end cap. Regarding claims 4 and 7, the case is generally cylindrical. Regarding claims 5 and 8, the case has a first crimped portion to which the end cap is clamped.

Kita et al. do not expressly teach that the insulators comprise an ethylene-propylene rubber having surface hardness of from 30 (durometer A) to 60 (durometer D), as recited in claim 2.

As noted above, Tanaka is directed to batteries comprising gaskets made of ethylene-

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propylene rubber.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated by the disclosure of Tanaka to use an ethylene-propylene rubber in the gaskets of Kita et al. In column 2, line 6, Tanaka teaches that this material “permits not only the improvement in the shelf stability during storage while [the battery] is not in use, but also the reduction of the degree of deterioration during use (during charging, discharging at a high current or pulse-discharging in an atmosphere whose temperature varies).” Accordingly, the artisan would be motivated to use an ethylene-propylene rubber material in the gaskets of Kita et al.

Furthermore, the E-P rubber of the Tanaka reference would be likely to have a hardness within the claimed range, as evidenced by the disclosure of Feldhake. As noted above, Feldhake is directed to a battery having a layer of cured sealing resin (12) between the cap (10) and the case (16) (see Fig. 3; col. 7, line 24). In column 6, line 65, the reference teaches that “[t]he cured epoxy-polyamide resin, herein after called ‘epoxy-polyamide resin’ or ‘the cured resin,’ is a visco-elastic solid having physical properties similar to ordinary rubber (Durometer hardness of about 40 to 70).” Thus, the disclosure of Feldhake indicates that a durometer hardness of between 40 and 70 is conventional in a rubber battery gasket, and therefore could be expected to be present in the gasket of the Tanaka reference. Accordingly, the range of durometer hardness recited in instant claim 2, as it overlaps with the range disclosed by Feldhake, is not considered to distinguish over the references.

6. Claims 2-8, 12-17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teramoto (U.S. Patent 5,571,632) in view of Tanaka and Feldhake.

Regarding claims 2 and 19, Teramoto teaches a battery comprising a case, an internal electrode body (13), an electrolyte, first and second terminals (12a, 11a), and an insulating gasket is (14) positioned between the case and the first terminal (see Fig. 5; col. 7, line 66). The gasket is made of polypropylene (see col. 10, line 45). Regarding claims 3, 6, 14, and 19, first and second end caps (15a) are positioned at opposite ends of the case, and the insulator is positioned between the case/first terminal (12a) and each end cap. Regarding claims 4, 7, 12, and 15, the case is generally cylindrical. Regarding claims 5, 8, 13, and 17, the case has first and second crimped portions to which the end cap is clamped.

Teramoto does not expressly teach that the insulators comprise an ethylene-propylene rubber having surface hardness of from 30 (durometer A) to 60 (durometer D), as recited in claims 2, 16, and 19.

As noted above, Tanaka is directed to batteries comprising gaskets made of ethylene-propylene rubber.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated by the disclosure of Tanaka to use an ethylene-propylene rubber in the gaskets of Teramoto. In column 2, line 6, Tanaka teaches that this material "permits not only the improvement in the shelf stability during storage while [the battery] is not in use, but also the reduction of the degree of



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deterioration during use (during charging, discharging at a high current or pulse-discharging in an atmosphere whose temperature varies).” Accordingly, the artisan would be motivated to use an ethylene-propylene rubber material in the gaskets of Teramoto.

Furthermore, the E-P rubber of the Tanaka reference would be likely to have a hardness within the claimed range, as evidenced by the disclosure of Feldhake. As noted above, Feldhake is directed to a battery having a layer of cured sealing resin (12) between the cap (10) and the case (16) (see Fig. 3; col. 7, line 24). In column 6, line 65, the reference teaches that “[t]he cured epoxy-polyamide resin, herein after called ‘epoxy-polyamide resin’ or ‘the cured resin,’ is a visco-elastic solid having physical properties similar to ordinary rubber (Durometer hardness of about 40 to 70).” Thus, the disclosure of Feldhake indicates that a durometer hardness of between 40 and 70 is conventional in a rubber battery gasket, and therefore could be expected to be present in the gasket of the Tanaka reference. Accordingly, the range of durometer hardness recited in instant claim 2, as it overlaps with the range disclosed by Feldhake, is not considered to distinguish over the references.

### ***Double Patenting***

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

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provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 2-5, 12, 13, and 19 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-12 of U.S. Patent No. 6,139,986 (Kurokawa et al) in view of Feldhake. The '986 patent claims do not expressly teach that the E-P rubber has a surface hardness of from 30 (durometer A) to 60 (durometer D). However, Feldhake teaches in column 6, line 58 that "ordinary rubber" has a durometer hardness of about 40 to 70. Accordingly, the rubber of the '986 claims would likely have a hardness within this range. Therefore, the instant claims define an obvious variation of the '986 claims.

9. Claims 2-10 and 12-19 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-53 of copending Application No. 09/863,108 (U.S. Pre-Grant Publication No. 2001/0049054) in view of Feldhake. The '108 application claims do not expressly teach that the E-P rubber has a surface hardness of from 30 (durometer A) to 60 (durometer D). However, Feldhake teaches in column 6, line 58 that "ordinary rubber" has a durometer hardness of about 40 to 70. Accordingly, the rubber of the '108 claims would likely have a hardness within this range. Therefore, the instant claims define an obvious variation of the '108 claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

10. Claims 2-5, 12-17, and 19 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-27 of copending Application No. 09/937,943 (U.S. Pre-Grant Publication No. 2003/0035993) in view of Feldhake. The '943 application claims do not expressly teach that the E-P rubber has a surface hardness of from 30 (durometer A) to 60 (durometer D). However, Feldhake teaches in column 6, line 58 that "ordinary rubber" has a durometer hardness of about 40 to 70. Accordingly, the rubber of the '943 claims would likely have a hardness within this range. Therefore, the instant claims define an obvious variation of the '943 claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

#### ***Response to Arguments/Declarations***

11. Applicants' declarations under 37 CFR §1.132 filed on July 9, 2003 are persuasive in establishing that the inventors of the JP 2000-149886 publication also invented the subject matter recited in the independent claims (claims 2 and 19) of the present application, thereby removing the JP '886 reference from consideration against claims 2 and 19. However, the declarations do not contain a statement regarding the inventorship of the subject matter recited in the dependent

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claims of the present application (i.e., claims 3-10 and 12-18). Accordingly, absent a statement of this type, the JP '886 reference is still considered to constitute prior art under 35 USC §102(a) against the dependent claims of the application.

### *Conclusion*

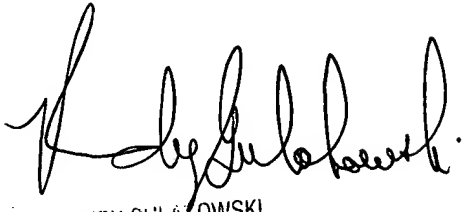
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (703) 305-0051. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached at (703) 308-4333. The phone number for the organization where this application or proceeding is assigned is (703) 305-5900. Additionally, documents may be faxed to (703) 872-9310 (for non-final communications) or (703) 872-9311 (for after-final communications).

Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

JSC

September 10, 2003

  
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